

## **REMARKS AND ARGUMENTS**

### **A. Interview Summary**

Applicants' representative thanks the Examiner for the telephone interview of October 17, 2008 during which amendments to the claims were discussed and it was agreed that the term "nucleic acid molecule" would be an acceptable amendment to further clarify the term "nucleic acid."

### **B. Claim Objections**

Page 3 of the Office Action states that claims 53-60 should be canceled in Applicants' response. Applicants cancel claims 53-60 with this response.

Paragraph 8 at page 4 of the Office Action lists seven objections to the pending claims because of some informalities. In response to the objections, Applicants amend the pending claims as provided in the accompanying amendments to the claims. Specifically, in response to objection A, the term "in vitro" in lines 3 and 7 of claim 44 is amended to "*in vitro*."

In response to objection B, the term "nucleic acid" in lines 3 and 7 of claim 44 is amended to "nucleic acid molecules." The term of art "nucleic acid molecule" is used in the claims in its ordinary meaning, which is well known to a person skilled in the relevant art. For example, the specification employs the term "DNA molecule" in lines 25-27 at page 16, which states "this is a DNA molecule, capable of replication in a host organism, into which a gene is inserted to construct a recombinant DNA molecule."

In response to objection C, the term "displaying" is amended to "displaying on the surface" in lines 5 and 11 of claim 44.

In response to objection D, the term “particle” is amended to “filamentous bacteriophage particle” in lines 7 and 11 of claim 44, line 3 of claim 47, lines 1 and 3 of claim 48, and lines 1 and 3 of claim 61.

In response to objection E, the term “nucleic acid” is amended to “a nucleic acid molecule” in line 7 of claim 44, line 3 of claim 47, lines 1 and 3 of claim 48 and line 5 of claim 61.

In response to objection F, the term “nucleic acid” is amended to “the nucleic acid molecule” in line 5 of claim 47, line 5 of claim 48, last line of claim 61 and line 3 of claim 62.

In response to objection G, “the nucleic acid” is amended to “the nucleic acid molecule” in line 5 of claim 61.

Finally, Applicants also amend the last line of claim 48 and line 5 of claim 61 by replacing “nucleic acid” with “the nucleic acid molecule.”

Applicants believe that the amendments overcome all objections and therefore, the Examiner may property withdraw the objections; and withdrawal is respectfully requested.

### **C. Double Patenting**

Pending claims 44, 47-48, and 61-62 stand rejected over co-owned US Patents 6,555,313 and 5,885,793 at pages 5 and 6 of the Office Action under the doctrine of non-statutory double patenting. In addition, in a Supplemental Communication mailed on September 22, 2008, the Examiner requested that the Applicants review US patents 7,195,866; 6,916,605; 6,582,915; 6,544,731; 6,521,404; 6,017,732; 5,871,907; 5,858,657; and 5,837,242 for possible obviousness-type double patenting issues.

In response and in order to expedite prosecution of the above-identified patent application, Applicants enclose with this response a terminal disclaimer which disclaims any

term granted on the above-identified patent application that runs past the expiration dates of U.S. Patent Nos. 6,555,313; 5,885,793; 7,195,866; 6,916,605; 6,582,915; 6,544,731; 6,521,404; 5,871,907; 5,858,657 and 5,837,242. The terminal disclaimer is being submitted to expedite allowance and is not intended to be an admission that the claimed subject matter of any of the listed patents is obvious over any subject matter claimed in the present application or any of the listed patents.

With respect to U.S. patent 6,017,732, the patent is assigned to the Medical Research Council (MRC) only, and not to the MRC and Cambridge Antibody Technology, Inc., and a terminal disclaimer is not available to obviate a possible non-statutory double patenting rejection. As to a possible statutory obviousness rejection, U. S. Patent No. 6,017,732, the front page of which is attached as Exhibit A and which is listed in a Supplemental Information Disclosure Statement filed herewith, is not available as prior art to the present application in that its earliest priority date is 30 September 1993, while the present application has a priority of at least as early as 10 July 1991, the filing date of PCT/GB91/01/01134, although support for the claimed subject matter may be found in earlier priority applications.

**CONCLUSION**

Applicants believe that the instant application is now in good and proper order for allowance and early notification to this effect is solicited. If, in the opinion of the Examiner, a telephone conference would expedite prosecution of the instant application, the Examiner is encouraged to call the undersigned at the (312) 595-1408.

Respectfully submitted,

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## **Exhibit A**



US006017732A

**United States Patent** [19]**Jespers et al.**[11] **Patent Number:** **6,017,732**[45] **Date of Patent:** **Jan. 25, 2000**

[54] **BACTERIOPHAGE LIBRARY DISPLAYING IMMUNOGLOBULIN REPERTOIRES WITH A CHEMICAL MOIETY COVALENTLY BOUND WITHIN THE BINDING SITE: PRODUCTION AND SELECTION THEREOF**

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[21] **Appl. No.:** **08/564,207**

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§ 371 Date: **Sep. 4, 1997**

§ 102(e) Date: **Sep. 4, 1997**

[87] **PCT Pub. No.:** **WO95/01438**

**PCT Pub. Date:** **Jan. 12, 1995**

[30] **Foreign Application Priority Data**

Jun. 30, 1993 [GB] United Kingdom ..... 9313509

[51] **Int. Cl.<sup>7</sup>** ..... **C12N 7/01; C12N 15/13; C07K 16/46; C07K 1/107**

[52] **U.S. Cl.** ..... **435/69.6; 435/69.1; 435/69.7; 435/71.1; 435/320.1; 435/472; 530/350; 530/402; 530/387.1; 530/387.3**

[58] **Field of Search** ..... 530/350, 402, 530/387.1, 387.3; 435/69.1, 69.7, 69.6, 71.1, 320.1, 472

[56] **References Cited**  
**FOREIGN PATENT DOCUMENTS**

WO 92/20791 11/1992 WIPO.

**OTHER PUBLICATIONS**

Clackson et al., *Nature* 352:624-628 (1991).  
Barbas III et al., *Proc. Natl. Acad. Sci. USA* 89:4457-4461 (1992).

Staunton et al., *Protein Engineering* 6(Suppl.):93 (1993).

Pollack et al., *Science* 242:1038-1040 (1988).

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[57] **ABSTRACT**

Repertoires of first specific binding pair (sbp) members wherein each first sbp member has a chemical moiety bound covalently at an amino acid residue within the binding site are made and may be displayed at the surface of an organism such as a bacteriophage. Methods of making such repertoires may involve the provision of a population of encoding nucleic acid molecules wherein a codon encoding a selectively or preferentially modifiable amino acid is introduced in the region encoding the binding site, for instance by mutation or gene construction. First sbp member (e.g. antibodies) wherein binding to second sbp member (e.g. antigen) is enhanced in or dependent on the presence of the chemical moiety in the binding site may be selected from the repertoires.

**25 Claims, 4 Drawing Sheets**